Amendments to the Claims

1   1. (currently amended) A method for learning a structure of a video to detect

2   events in the video consistent with the structure, comprising:

3   selecting sets of features from the video;

4   updating a hierarchical ~~statistical~~ hidden Markov model for each set of

5   features;

6   evaluating an information gain of the hierarchical ~~statistical~~ hidden

7   Markov model;

8   filtering redundant features;

9   updating the hierarchical ~~statistical~~ hidden Markov model based on

10   the filtered features;

11   applying a Bayesian information criteria to each hierarchical hidden

12   Markov model and feature set pair; and

13   rank ordering the hierarchical hidden Markov model and feature set

14   pairs to learn the structure and detect the events in the video in an

15   unsupervised manner.

1   2. (original) The method of claim 1, in which the hierarchical statistical

2   model uses Gaussian mixtures.

    3. (canceled)

1 4. (currently amended) The method of ~~claim 3~~ <u>claim 1</u>, in which states of
2 events in the video are modeled as low-level hidden Markov models in the
3 hierarchical hidden Markov model, and the events are modeled as a high-
4 level Markov chain in the hierarchical hidden Markov model.

1 5. (currently amended) The method of claim 1, in which the features include
2 dominant color ratios, motion intensity, ~~a least-square estimates~~ <u>least-square</u>
3 <u>estimates</u> of camera translation, audio volume, spectral roll-off, low-band
4 energy, high-band energy, zero-crossing rate (ZCR).

1 6. (original) The method of claim 1, in which the features are filtered with a
2 Markov blanket.

1 7. (original) The method of claim 1, in which the evaluating is performed
2 using expectation maximization and a Markov chain Monte Carlo method.